



MARCH/APRIL 2024

# Xplor

DON'T  
SHELL  
YOURSELF  
SHORT

LIFE LESSONS FROM  
A BOX TURTLE





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*Pull out this poster* and tape it to your wall to make your room look wild.
- 

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Mama cottontails begin having babies in March. During the day, mom often leaves her little rabbits by themselves. If you find a baby bunny, it's OK to look, but leave the little guy alone. His mom will soon return to take care of him.



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#### ON THE COVER

Three-Toed Box Turtle



# STRANGE BUT TRUE

Your guide to all the  
**UNUSUAL, UNIQUE,**  
AND **UNBELIEVABLE**  
stuff that goes on in nature

## DOUBLE-CRESTED

**CORMORANTS** often use small rocks to build the walls of their ground nests. If a stone tumbles into the center of the nest, the parents usually take care of it as if it were one of their eggs.



Babies on board:  
Mama **CRAYFISH** glue hundreds of eggs to the underside of their tail flippers. Even after the eggs hatch, the baby mudbugs continue to cling to mom for several weeks.



**PAINTBRUSH** are the pirate plants of the prairie.

Their roots tap into nearby plants to steal water and nutrients. Because of this, plants growing near paintbrush are sometimes shorter than those growing farther away.



Most fish get oxygen from water using gills. But **EYETAIL BOWFINS** can also gulp air at the surface. A bowfin's swim bladder works like a lung, which helps the fish survive in oxygen-scarce water or even on land for a few days.



## AMERICAN WOODCOCKS

can fly 30 miles per hour for short bursts. But during courtship displays, the chubby birds clock some of the slowest flight speeds ever recorded, about 4 miles per hour.



Four peas in a pod: **NINE-BANDED ARMADILLOS** nearly always give birth to four — no fewer, no more — identical babies, either all boys or all girls. It takes a couple of months for baby 'dillos to grow the armor that adults possess.



A long line at the restroom isn't a problem for **PILLBUGS** because, well, they don't pee. Most animals urinate to get rid of wastes that contain ammonia. Pillbugs get rid of ammonia by releasing it as a gas through tiny holes in their shells.





# WHAT IS IT?

DON'T KNOW? Jump to Page 21 to find out.

- 1 Through the darkness I sneak,
- 2 Without a croak or a creak.
- 3 It's a puddle I seek,
- 4 Where I'll dance cheek to cheek.



## TWO TRUTHS, ONE LIE

— Which —  
fascinating fact  
is actually a fib?

Answer on Page 21



- 1 A spring peeper's throat pouch, which is used to make the frog's namesake call, can wear out and leak like a flabby balloon.
- 2 In winter, a spring peeper's body may freeze, and its heart may stop. In spring, the *frogsicle* thaws out, *hoppy* as ever.
- 3 A female peeper can lay 1,200 eggs. Each is about 1 millimeter across, about as thick as 10 pages of *Xplor*.



# HOW TO

## TIE-DYE A CAMOUFLAGE T-SHIRT

**S**ure, you can buy camouflage clothes for turkey season, but where's the fun in that? Here's how to tie-dye your own at home.

### HERE'S WHAT YOU NEED

- Plastic dropcloth or large trash bag
- White T-shirt (100 percent cotton)
- Rubber bands
- Large pot or bucket
- Soda ash (Look for it at craft stores.)
- Tie-dye kit (Make sure the kit has green, brown, and black dyes.)
- Three squeeze bottles
- Plastic gloves
- Paper towels
- Paper plate
- Gallon zip-top bag



### HERE'S WHAT YOU DO

- 1** Put on old clothes and place a plastic dropcloth over your work space. Remember: Fabric dye will stain whatever it touches, including your skin.



**2** Lay your T-shirt flat on a table. Starting in the middle of the shirt, scrunch up the fabric until you've made a flat, round bundle with lots of wrinkles.



**3** Put lots of rubber bands around the bundle to hold it tightly together.



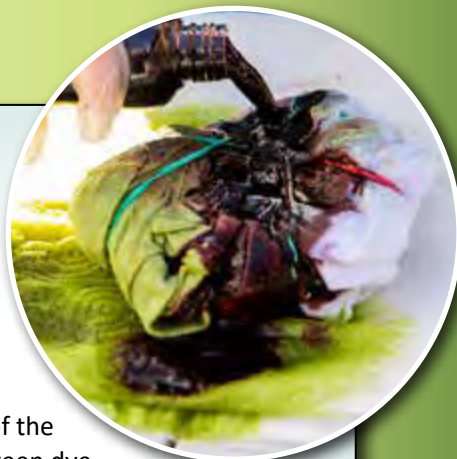
**4** In a large pot or bucket, mix half a cup of soda ash with a gallon of warm water. Soak your bundled-up shirt in the water for an hour. While it's soaking, mix up the dye according to the kit's directions. Fill each of the squeeze bottles with a different color.



**5** Put on plastic gloves and remove your shirt from the soda ash water. Lay the bundle flat and push out as much water as you can.



**6** Stack 10 paper towels on a paper plate. Place the bundle on the towels. Using squeeze bottles, soak the top third of the bundle with green dye, the middle third with brown dye, and the lower third with black dye. Flip the bundle over and do the same thing on the other side. Make sure dye soaks well into the shirt or you'll have lots of white areas.



**7** Put the bundle in a zip-top bag and leave it there for 24 hours.



**8** Take off the rubber bands and rinse the shirt in cold water until no more dye flows out. For the brightest colors, let the shirt dry in the sun. Then wash it by itself in cold water using normal laundry detergent. Run it through the dryer, and it's ready to wear.



SUCCESS COMES  
+  
×  
SLOWLY

## MOTIVATIONAL MESSAGES FROM A THREE-TOED BOX TURTLE

My name is  
Doug Holey, and I am a  
motivational speaker. I've been  
around long enough to learn a  
thing or two about life. So shut  
your yapper and listen up.

### LIFE ISN'T A SPRINT, IT'S A MARATHON

Let's get started by letting me  
give you a little bit of a scenario  
of what my life is all about. First  
off, I'm single, I live in a forest  
down by the river, and I'm 49  
years old. That's ancient for most  
wild critters! But box turtles often  
reach 50 to 80 years old, and  
some of us can live to be over 100!








## COME OUT OF YOUR SHELL

So what's the secret to my long life? It's my shell. Box turtles have a hinge on their lower shells. It lets me pull in my head and legs and close my shell tight. Not much can hurt me then. But guess what? With your shell shut, you can't see JACK SQUAT! Eventually, you've got to poke your head out and GO FOR IT!



DON'T LET OTHERS  
DEFINE YOU



Biologists call us "three-toed box turtles" because most of us have three toes on our hind feet. Well, la-dee-turtle-da! Some

of us have four toes! And here's another thing: Boy box turtles have a thick tail and red eyes. Girl box turtles have a thin tail and yellow eyes.







## HOME IS WHERE YOUR SHELL IS

Like most three-toed box turtles, I live in an oak-hickory forest. My close cousin, the ornate box turtle, prefers prairies. I wander around during the day and sleep at night wherever I end up. Before nodding off, I snuggle under a blanket of leaves or cover myself with a few inches of dirt.



## LOOK ON THE BRIGHT SIDE

I'm cold-blooded, which means my body temperature changes based on the weather. Do I let that get me down? No sir-ree-bob! When it's cool, I bask in a sunbeam to warm up. When it's hot, I crawl into a clump of shady grass or swim in a cool stream.



## GET SOME REST

Hey! Help me out. I can't see real good. Is that Jack Frost over there? Around October, I dig a shallow hole to take a long winter nap. A few days of cold weather won't hurt me. Antifreeze in my blood keeps my organs from turning to ice. Around April, I wake up and shake the frost off my shell.



## GET SOME EXERCISE

Now you kids are probably asking yourselves, "Hey Doug, how can we get back on track?" Well as I see it, there's only one way: exercise. I crawl nearly 50 yards every day! And I carry a heavy shell to boot! I've lived my whole life in the same 25-acre patch of woods — but I've explored every inch of it.



## DON'T PUT ALL YOUR EGGS IN ONE BASKET

From mid-May to July, mama turtles dig shallow nests in loose soil and lay two to eight eggs inside. Warmer nests usually produce girls. Cooler nests usually produce boys. But whoopsie-daisy! Lots of eggs get eaten by skunks and raccoons. Luckily, mama turtles usually make more than one nest.

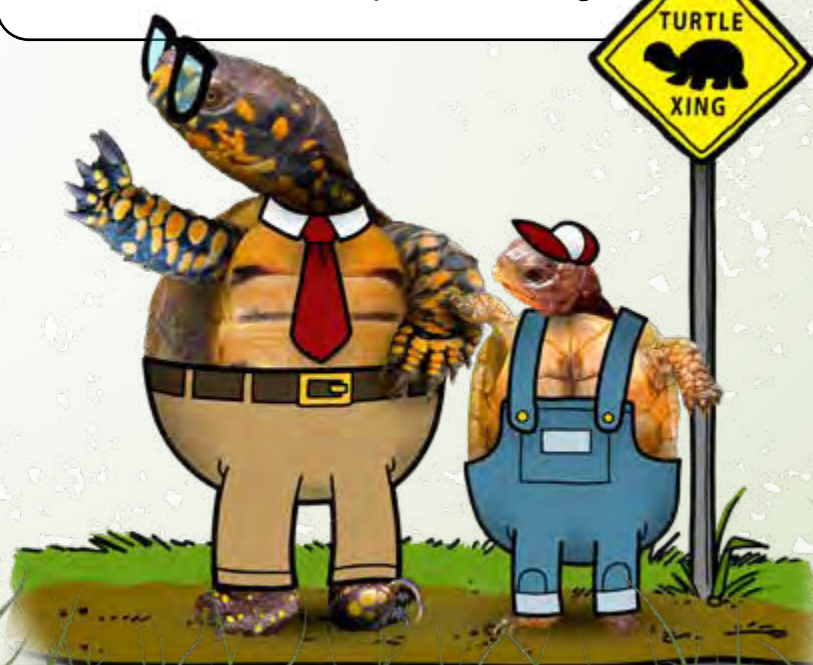


## EAT YOUR VEGGIES

Take it from me, you won't live to see 100 on a steady diet of government cheese. That's why young box turtles eat mostly insects and worms. And once we get older, we throw in more veggies, like dogwood fruits, blackberries, tender plants, and mushrooms.

## LET FRIENDS HELP

You know what's worse than living in a van down by the river? Getting crushed trying to cross the street! Thousands of box turtles get hit by cars in April and May. You can help. Look both ways to make sure there aren't any cars coming, then carry turtles to the side of the road in the direction they were crawling.





# SIX-SPOTTED TIGER BEETLE

## WING WRAPPERS

Shiny shell-like wing covers, called elytra (*el-ih-truh*), hide and protect the beetle's wings when they're not in use.

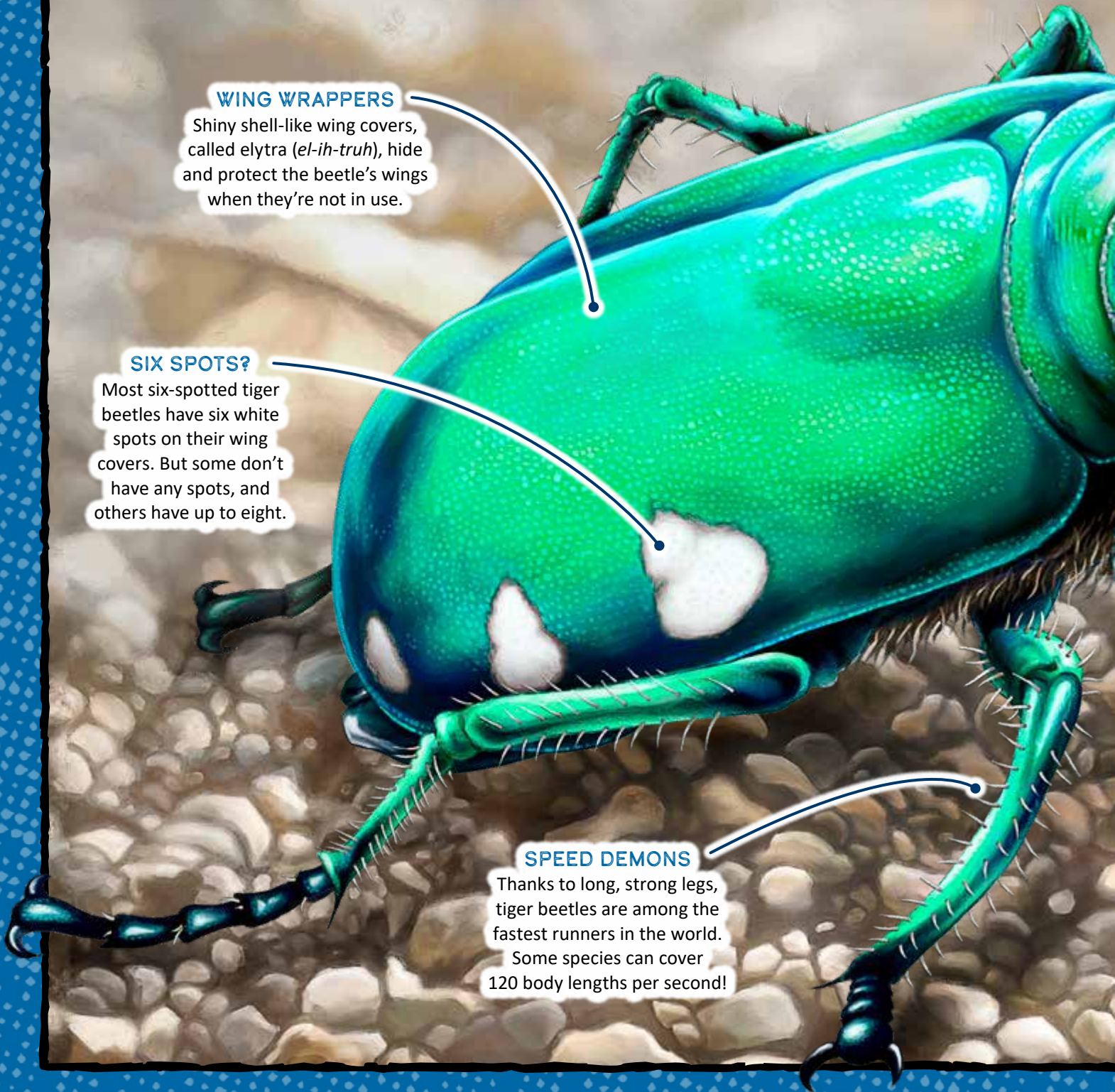
## SIX SPOTS?

Most six-spotted tiger beetles have six white spots on their wing covers. But some don't have any spots, and others have up to eight.

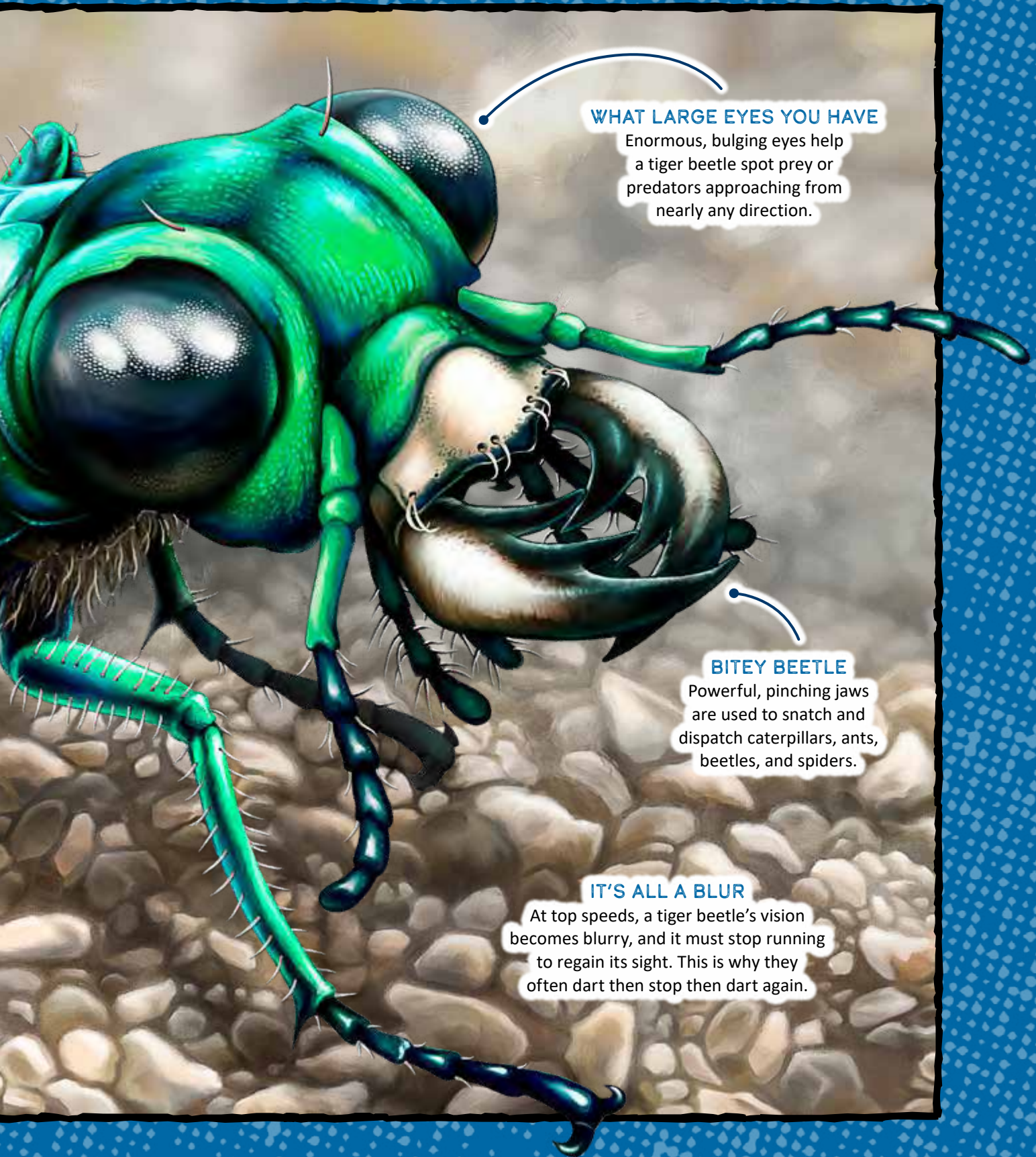
## SPEED DEMONS

Thanks to long, strong legs, tiger beetles are among the fastest runners in the world.

Some species can cover 120 body lengths per second!







**WHAT LARGE EYES YOU HAVE**

Enormous, bulging eyes help a tiger beetle spot prey or predators approaching from nearly any direction.

**BITEY BEETLE**

Powerful, pinching jaws are used to snatch and dispatch caterpillars, ants, beetles, and spiders.

**IT'S ALL A BLUR**

At top speeds, a tiger beetle's vision becomes blurry, and it must stop running to regain its sight. This is why they often dart then stop then dart again.



# Life *on the* Soggy Side



**W**etlands can be muggy and buggy. They're often soggy and stinky. You might get stuck in the muck. But wetlands aren't wastelands. They're wonderful places! Join *Xplor* for a guided tour to see what makes them so marvelous.

## Show-Me Wetlands

Nearly 90 percent of Missouri's wetlands have been lost. That's not great! But high-quality wetlands can still be found scattered across the state.

- 1 Loess Bluffs National Wildlife Refuge
- 2 Nodaway Valley Conservation Area
- 3 Bob Brown Conservation Area
- 4 Fountain Grove Conservation Area
- 5 Swan Lake National Wildlife Refuge
- 6 Grand Pass Conservation Area
- 7 Ted Shanks Conservation Area
- 8 B.K. Leach Conservation Area
- 9 Marais Temps Clair Conservation Area
- 10 Columbia Bottom Conservation Area
- 11 Eagle Bluffs Conservation Area
- 12 Montrose Conservation Area
- 13 Four Rivers Conservation Area
- 14 Schell-Osage Conservation Area
- 15 Duck Creek Conservation Area
- 16 Mingo National Wildlife Refuge
- 17 Otter Slough Conservation Area
- 18 Ten Mile Pond Conservation Area





## What to Bring

- ✓ A pair of binoculars brings distant critters in for a closer look.
- ✓ Birds abound in wetlands. A field guide lets you learn who you're looking at.
- ✓ Creepy-crawly critters squiggle and squirm in murky marsh water. A small dip net will help you get a good look at them.
- ✓ Wetlands are wet (*duh!*) and muddy. If you plan to explore, wear a pair of rubber boots.
- ✓ Mosquitoes love marshes. Keep the bloodsuckers at bay by spraying yourself with insect repellent.

## When to Go

Spring is a fantastic time to visit a wetland. In March, ducks and geese flock to wetlands during their northward migration. In April, pelicans pass through and herons arrive. And in May, shorebirds probe mudflats and warblers flit about willow branches.

### A Tree that Breathes with its Knees

Bald cypress trees have bumpy stumps that stick out of the water. The stumps act like snorkels to carry air down to the tree's waterlogged roots. The knees also provide a wide base to anchor the tree in gooeey mud.



### Plant Plumbing

Since wetland soils stay soggy, plants need a way to get air down to their roots. Cattails have pipes in their leaves and stems that transport air downward. Cut a cattail leaf in cross section, and you'll see the tiny tubes.



## Do You Smell Something?

You might notice a faint odor when you visit a wetland. That's because their bottoms pass gas. A handful of marsh muck contains billions of bacteria and other microscopic creatures. Some of them break down dead plants and animals. As they do, they release gases that smell like rotten eggs. *Pee-yoo!*



# Migration Stations

Missouri is the halfway point on the Mississippi Flyway. Imagine a flyway as a highway in the sky that ducks, geese, and other waterbirds follow to get from northern nesting grounds to southern wintering areas. Travel-weary wanderers gather in wetlands to rest and refuel on their long journeys.



## Pelican Party

Teams of American white pelicans flap and splash to herd fish into shallow water. In a single scoop, a pelican can gather enough water to fill a 3-gallon soup pot. After draining its beak, it swallows any fish trapped inside.

# A Rainbow of Waterfowl

Ducks of nearly every color flock to Missouri's wetlands in the spring. How many different kinds and colors can you spot?

## Northern Shoveler

Comblike ridges line the edges of this duck's impressive beak. The ridges work like a spaghetti strainer, letting water pour out but trapping food inside.



## Mallard

Mallards are the most common duck in North America. Nearly all farm-raised ducks can trace their ancestry to this widespread waterfowl.



## Wood Duck

Wood ducks nest in holes high up in trees. A day after hatching, the ducklings follow mom to the entrance of the hole and jump out.



## Ring-Necked Duck

Although they dive to find food, ring-necked ducks are often found in shallower water than most diving ducks.



## Redhead

To attract a mate, redhead drakes bend backwards until their beaks touch their tails. Then they snap forward while giving a catlike *mee-ooow*!



## Common Goldeneye

When goldeneye ducklings hatch, their peepers are brown. Over the next several months, they turn purple, then blue, then green, and — finally — golden.



## Bufflehead

Chonky but tiny, mama buffleheads nest in abandoned woodpecker holes that other ducks can't fit into.



## One Big, Honking Blizzard

Snow geese feed in harvested crop fields near wetlands, blanketing the ground. The more geese in a group, the more eyes there are to keep watch while their friends feed. If a lookout spots a predator — or you — it honks an alarm, and the whole flock erupts into flight like an upside-down snowstorm.



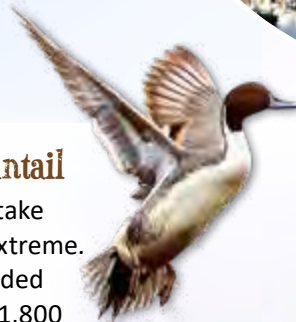
## Blue-Winged Teal

These small, sun-loving ducks migrate later than other ducks. On their way north, they linger in Missouri well into May.



## Northern Pintail

Some pintails take travel to the extreme. One was recorded to have flown 1,800 miles nonstop!



## Green-Winged Teal

Stretching only a foot from beak to tail and weighing only as much as a soup can, this dapper duck is North America's smallest dabbling.



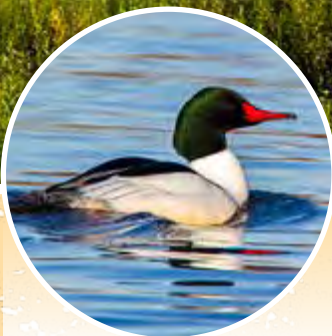
## Scaup

Two kinds of scaup visit Missouri: greater scaup and lesser scaup. But good luck telling them apart! They look nearly identical.



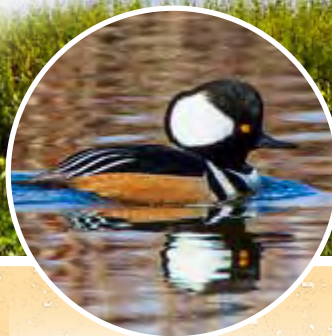
## Canvasback

These regal ducks are among the fastest of flyers. With a strong tailwind, they can reach speeds over 70 miles per hour!



## Common Merganser

Toothlike ridges on a merganser's bill help it hold on to slippery fish, their favorite snacks.



## Hooded Merganser

Mama mergansers often sneak an egg or two into the nests of other females. Some nests have been found with over 40 eggs inside.



## Gadwall

Gadwalls are often seen away from the shoreline, feeding in deeper water than other dabbling ducks.



## American Wigeon

Wigeons eat more veggies compared to other ducks. Because their bills are so stubby, they can pinch harder, which makes it easy to pluck plants.



# Mudflat Buffet

The oozy mud and mucky water of a marsh is jam-packed with yummy insects, worms, and snails. Shorebirds wade around probing for snacks. How many of these leggy, long-beaked birds can you spot?

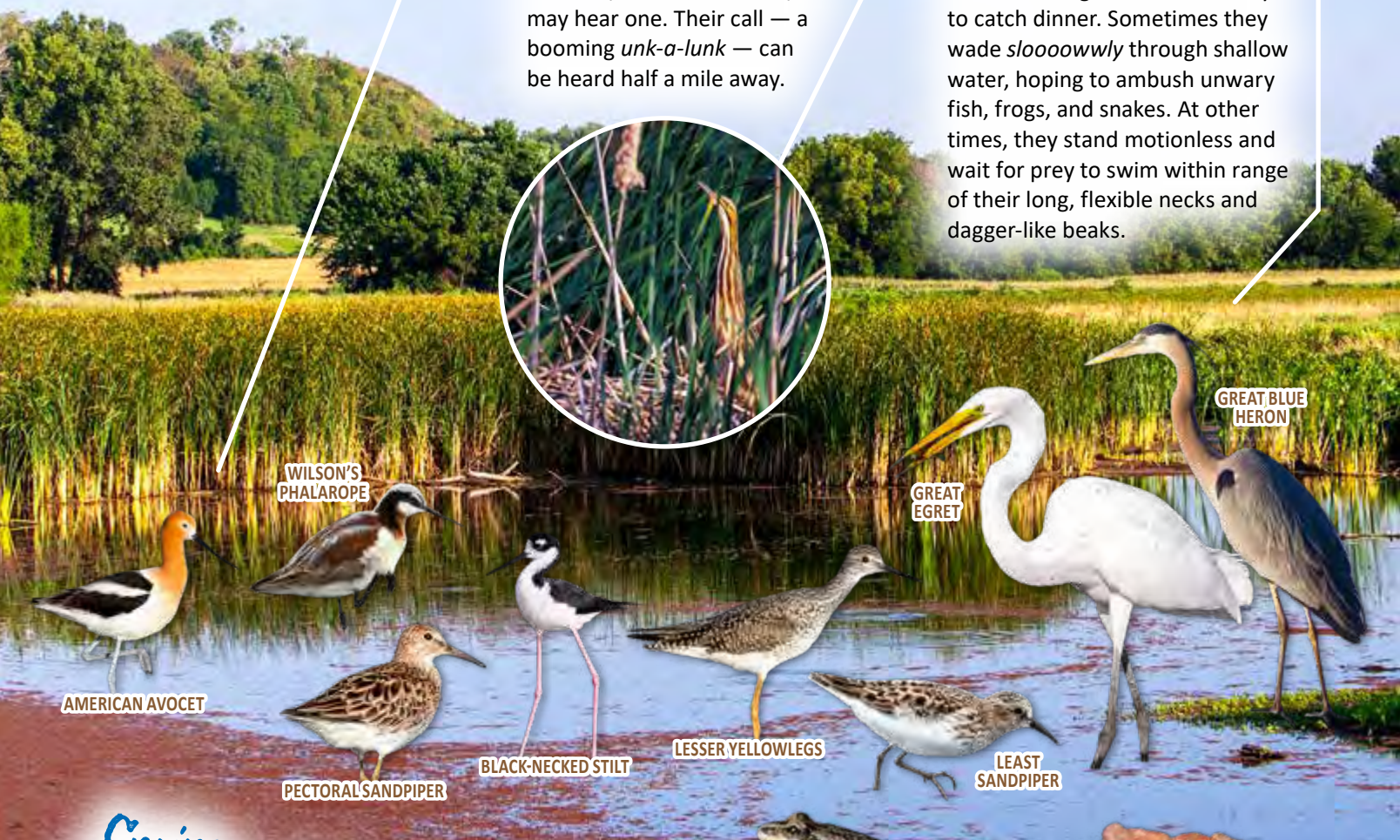
## Hiding in Plain Sight

If birds played hide-and-seek, American bitterns would win. When predators prowl, a bittern doesn't flinch a feather. Instead, the brown-streaked bird freezes and points its beak skyward. You'll need lots of luck to spot a bittern, but you may hear one. Their call — a booming *unk-a-lunk* — can be heard half a mile away.



## Hunting Herons

Herons and egrets have two ways to catch dinner. Sometimes they wade *sloooowly* through shallow water, hoping to ambush unwary fish, frogs, and snakes. At other times, they stand motionless and wait for prey to swim within range of their long, flexible necks and dagger-like beaks.



# Spring Symphony

Listen closely and you'll  
hear spring in full swing  
as a chorus of amphibian  
love songs overflows  
from each shallow pool.



## Spring Peeper

*Peep, peep, peep* (like the “ping” made by striking the high note on a xylophone)



## Chorus Frog

*Crrrreeeeeeeep* (similar  
to the sound made by  
running your fingernail  
over the teeth of a comb)



## American Toad

*Brrrrrrrrrrrrrr* (a  
high-pitched, musical,  
drawn-out trill)



## Mansions Among the Branches

If you see a huge nest high in a tree, it might belong to a bald eagle. Newlywed eagles build relatively small nests. Each year, the couple adds more sticks to the old structure. After several years, the nest becomes ginormous. One in Ohio was used for 34 years until the tree it was in fell down. The nest weighed more than a car!



## Baby Dragons

Swish a dip net through the murky water and you'll likely find baby dragonflies, damselflies, and mayflies squirming in the mesh. The young insects, called larvae, don't look anything like their parents.

## Soaking up the Sun

Look for turtles, like this red-eared slider, crowded onto logs, stretching out their legs, soaking up sunshine. Basking is big business for the shelled reptiles. Sunlight helps a turtle raise its temperature and produce vitamin D.



## Muskrat

A pile of plants and mud is a muskrat's house. Ducks, turtles, and snakes like to loaf on top of these messy mounds.



## Beaver

Beavers gnaw down trees to build their homes and dams. The stumps they leave behind look like they've been run through a pencil sharpener.



## Raccoon

Masked bandits often leave clues of their crimes: five-fingered footprints in the mud.



## Marsh Mammals

Most mammals come out after dark, so you may not see many on your visit. But look closely, and you'll probably see signs they've left behind.

## River Otter

A narrow, slick slide down a steep, muddy bank offers evidence a river otter's been around.





# XPLOR MORE

## Find the Fungi

**M**orel mushrooms are like nature's Easter eggs. They're small, sort of egg-shaped, and hidden among leaves on the forest floor. Searching for them is tons of fun and worth the effort because they taste yummy.

Morels pop up in mid-April after warm rains have dampened the soil and when temperatures stay above 50 degrees for a few days. Look for them in river bottoms and on south-facing slopes, near May apples, dead elms, and ash trees, and in old orchards and recently logged areas.

**Can you find  
40 morels hidden  
in this forest?**



A photograph of a forest floor in spring. The ground is covered with fallen leaves and several large, green, deeply lobed leaves of a plant, likely a wild radish. Numerous morel mushrooms are scattered throughout the scene, some growing in small clearings and others near the base of trees. In the background, a dense forest of tall, thin trees with sparse green foliage is visible. A yellow circular callout box with a black border is positioned in the upper right quadrant, containing a warning message.

## Warning!

Never eat raw morels.

And if you're not  
absolutely, positively  
sure it's a morel, DON'T  
EAT IT AT ALL! Some  
mushrooms are  
deadly.



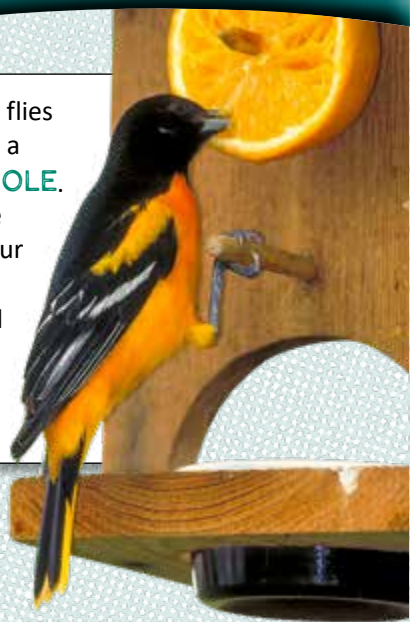
# GET OUT!

FUN THINGS TO DO  
AND GREAT PLACES  
TO DISCOVER NATURE



After spending winter in warm, sunny Central America, **RUBY-THROATED HUMMINGBIRDS RETURN** to Missouri in April. Put up a nectar feeder to watch the feisty flyers fight over who gets to sip.

What's orange and flies and loves fruit? It's a **BALTIMORE ORIOLE**. You can attract the brilliant birds to your yard by cutting oranges in two and placing the halves outside, with the cut sides facing up.



**CATCH A RAINBOW** when trout season opens on March 1 at Missouri's four trout parks. To fish at the parks, you must buy and wear a daily trout tag from the park store. For additional rules and details, cast a line to [mdc.mo.gov/fishing/species/trout](http://mdc.mo.gov/fishing/species/trout).



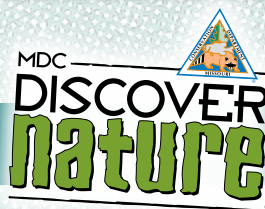
Look for the showy red flowers of **COLUMBINE** abloom on rocky bluffs and shady hillsides throughout Missouri. The deep, nectar-filled flowers are a favorite of hummingbirds and hummingbird moths.



In mid-March, **WATER STRIDERS START SKATING** across the surface of ponds and streams. A strider's legs are covered with thousands of microscopic hairs. The hairs repel water and trap air, allowing the insect to glide across the water's surface without sinking.



Looking for more ways to have fun outside? Find out about Discover Nature programs in your area at [mdc.mo.gov/events](http://mdc.mo.gov/events).





WHAT IS IT?

— FROM PAGE 3 —



## SPOTTED SALAMANDER

On rainy spring nights, spotted salamanders creep from their burrows in the woods and crawl to shallow, fish-free ponds. There, males and females swim together — some biologists call it a dance — then females lay globs of eggs on underwater plants. In a month, legless baby salamanders hatch out. Unlike their air-breathing parents, the little ones have gills and breathe water. By summer, they've grown legs and lungs, and leave the water to find a burrow of their own.

GO FIND IT!



Cut out this critter card and take it with you outside.  
How many of the things on the card can you find?

## PERIODICAL CICADA



*Periodical cicada*



*Annual cicada*

### BURIED BABIES

Baby periodical cicadas, called nymphs, live underground. Some species stay buried for 13 years, others for 17 years.

### LET'S SPLIT

When the time's right, a nymph crawls out of the ground, its exoskeleton splits open, a winged adult wiggles out, and the crunchy shell gets left behind.

### RAISING A RUCKUS

To attract a mate, males flex drumlike organs on their tummies to create a loud hum. When thousands "sing" together, the drone is deafening.

### I CAME, I SAWED, I LAID EGGS

Female cicadas use a sawlike structure on their tails to slit open twigs and lay eggs inside.

### PERIODICAL VS. ANNUAL

Periodical cicadas have black bodies and red eyes. Annual cicadas, seen every year in July and August, have green bodies and dark eyes.

ONE  
LIE

— FROM PAGE 3 — Answer: 1



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[mdc.mo.gov/xplor](https://mdc.mo.gov/xplor).

FREE TO MISSOURI HOUSEHOLDS

**GO FIND IT!** ≡

In 2024, millions of 13-year periodical cicadas will emerge in late April across Missouri. Adults will stick around through June. For more on these noisy bugs, visit [mdc.mo.gov/field-guide](https://mdc.mo.gov/field-guide).

PERIODICAL-CICADA

